

REMARKS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-20 are presently active in this case, Claim 1 having been amended by way of the present Amendment. Claims 21-36 have been canceled without prejudice or disclaimer.

In the outstanding Official Action, Claims 1-7 were rejected under 35 U.S.C. 102(b) as being anticipated by Küntziger et al. (U.S. Patent No. 3,888,123). Claims 1-7, 10-12, and 19 were rejected under 35 U.S.C. 103(a) as being unpatentable over Bassereau (U.S. Patent No. 2,446,403). Claims 1-20 were rejected under 35 U.S.C. 103(a) as being unpatentable over the Tejima et al. reference (JP 9-248549) in view of the Bassereau reference. For the reasons discussed below, the Applicants request the withdrawal of the art rejections.

Regarding the Küntziger et al. reference, the Applicants note that a claim is anticipated only if each and every element as set forth in the claims is found, either expressly or inherently described, in a single prior art reference. As will be demonstrated below, the Küntziger et al. reference clearly does not meet each and every limitation of independent Claim 1.

Claim 1 recites a treatment apparatus comprising a first hermetic chamber having a first opening, and a tube capable of inserting into the first opening, with the tube having a second opening on an end of the tube and a third opening on the tube and the end facing the first hermetic chamber. The treatment apparatus further comprises a first hermetic door, placed outside the first hermetic chamber, capable of opening and closing the first opening, the first hermetic door being positioned between the second opening and the third opening

such that the first hermetic door is shielded from the first hermetic chamber by the tube when insertion of the tube into the first opening is completed. The Applicants submit that the Küntziger et al. reference does not disclose all of the above limitations.

The Küntziger et al. reference describes a probe (2) that is mounted so as to be horizontally introduced into and withdrawn from a blast furnace (4). A cut off valve (12) is provided on the blast furnace wall (14) and is opened to introduce the probe (2) and is closed with the probe (2) in an inoperative position. The probe (2) is provided with apertures or gas entry ports (18, 20, 22, 24, 26, 28, 30, 32, and 34) on its cylindrical outer casing (16).

The Küntziger et al. reference fails to disclose or even suggest a tube having a second opening on an end of the tube and the end facing a first hermetic chamber, as recited in Claim 1. As noted above, the probe (2) of the Küntziger et al. reference is provided with apertures or gas entry ports (18, 20, 22, 24, 26, 28, 30, 32, and 34) at radial positions along its cylindrical outer casing (16). The Küntziger et al. reference does not disclose or suggest an opening on the end of the probe (2). Thus, the Küntziger et al. reference does not anticipate Claim 1 of the present application.

Accordingly, the Applicants respectfully request the withdrawal of the anticipation rejection of Claim 1 and dependent Claims 2-7 based on the Küntziger et al. reference.

Regarding the obviousness rejections, the basic requirements for establishing a *prima facie* case of obviousness as set forth in MPEP 2143 include (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings, (2) there must be a reasonable expectation of success, and (3) the reference (or

references when combined) must teach or suggest all of the claim limitations. The Applicants respectfully submit that a *prima facie* case of obviousness cannot be established in the present case because the references, either when taken singularly or in combination, fail to teach or suggest all of the claim limitations recited in independent Claim 1 of the present application.

Neither of the cited references singularly or in combination disclose a first hermetic door that is positioned between the second opening and the third opening such that the first hermetic door is shielded from the first hermetic chamber by the tube when insertion of the tube into the first opening is completed, as recited in Claim 1 of the present application. Since in both of the obviousness rejections, the Bassereau reference is cited for the teaching of the above features, and since the Applicants submit that the Bassereau reference fails to teach or even suggest such a feature, then both obviousness rejections will be addressed together below.

The Official Action cites the Tejima et al. reference for the teaching of various features in the obviousness rejection that combines the Tejima et al. reference and the Bassereau reference. However, the Official Action expressly notes that the Tejima et al. reference is silent as to an apparatus that comprises a tube capable of inserting into a first opening of a first hermetic chamber such that a door for the first opening is shielded from the first hermetic chamber by the tube when the tube is inserted into the first opening, wherein the tube comprises a second opening on a side facing the first hermetic chamber and a third opening on an area opposite the second opening. (Page 2, item 2, lines 7-11.) The Official Action cites the Bassereau reference for such teachings.

The apparatus of the Bassereau reference includes a furnace (1), a condenser (4a), and a movable closure plate (9). (Column 3, line 61, through column 4, line 8.) The furnace (1) has an opening and the condenser (4a) has an opening facing the furnace (1). The condenser (4a) also has an opening (4c) for permitting the pressure within and outside the condenser (4a) to be balanced. (Column 4, lines 30-33.) Further, the condenser (4a) can be inserted into the opening of the furnace (1) and the closure plate (9) can be moved from position (9a) to position (9b) for sealing the chamber (7). (Column 4, lines 1-8.)

Although the apparatus of the Bassereau reference has the above-mentioned structure, the closure plate (9) is not positioned between the opening facing the furnace (1) and the opening (4c) when the condenser (4a) is fully inserted into the opening of the furnace (1). As a result, vaporized gas discharged from the opening (4c) flows through the hood (5) and the chamber (7) and evacuated from the outlet (7a) so that vaporized metal is deposited on the bottom surface of the closure plate (9). (See the Figure.)

Thus, the Bassereau reference also does not disclose a first hermetic door that is positioned between the second opening and the third opening such that the first hermetic door is shielded from the first hermetic chamber by the tube *when insertion of the tube into the first opening is completed*, as expressly recited in amended Claim 1 of the present application. The Official Action admits that the Bassereau reference in fact fails to disclose these limitations. (Page 5.) The Official Action notes that the Bassereau reference is silent as to the first hermetic door being positioned between the second and third openings of the tube when the insertion of the tube into the first opening is *completed*. The Official Action notes

that the Bassereau reference illustrates the door (9) being located beyond the third opening (4c) of the tube (4a) when the insertion of the tube into the first opening (2a) is completed.

Thus, the Official Action admits that the cited combination of references fails to establish a *prima facie* case of obviousness as set forth in MPEP 2143, since the Official Action expressly acknowledges that the cited references, either when taken singularly or in combination, fail to disclose all of the limitations expressly recited in Claim 1 of the present application, which is a requirement for establishing *prima facie* obviousness. As noted in MPEP 2143.03, “[t]o establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.” Accordingly, for at least this reason, the Applicants respectfully request the reversal of the obviousness rejections of independent Claim 1 and Claims 2-20, which directly or indirectly depend therefrom.

Furthermore, the Official Action surmises that the difference between the location or arrangement of parts in the claimed invention and the inventions in the cited reference is an obvious shifting of parts. However, MPEP 2143.01 clearly indicates with regard to the motivation issue that (1) the fact that references can be modified is not sufficient to establish *prima facie* obviousness, and (2) the fact that the claimed invention is within the capabilities of one of ordinary skill in the art is not sufficient by itself to establish *prima facie* obviousness. The Official Action is *using the Bassereau reference to provide the motivation* to modify that reference either alone or when combined with the Tejima et al. reference to include a feature (namely, the orientation of the first hermetic door with respect to the second and third openings), *when the Bassereau reference never teaches or even suggests such a feature*. This interpretation begs the question that, if it would have been advantageous based

on the teachings of the Bassereau reference to modify the structure described in the Bassereau reference to include the claimed features of the present invention, then why did the Bassereau reference not include these features? In fact, the Bassereau reference never teaches or even suggests modifying the teachings of the Bassereau reference to include the orientation of the first hermetic door with respect to the second and third openings as recited in Claim 1 of the present application.

The Official Action suggests that the rearrangement of parts involves only routine skill in the art and requires a showing of unexpected results in order to be patentable; however, no such requirement is present in U.S. patent law. As noted in MPEP 2144.04 VI.C., “[t]he mere fact that a worker in the art could rearrange the parts of the reference device to meet the terms of the claims on appeal is not by itself sufficient to support a finding of obviousness. The prior art must provide a motivation or reason for the worker in the art, without the benefit of the appellant’s specification, to make the necessary changes in the reference device.” No such motivation is present in either of the cited references.

The orientation of the first hermetic door with respect to the second and third openings as recited in Claim 1 of the present application is not a mere aesthetic design choice, but rather provides structural benefits not contemplated by the cited references. The Official Action suggests that the statement in the Bassereau reference that the sealing means is *preferably* placed beyond the range of the vapors and is not exposed to deterioration by these vapors and metallic deposits provides the motivation needed to modify the Bassereau invention to include the features of the present application. However, the Applicants note that the Bassereau describes an invention that presumably achieves such goals without the

need for any modifications. The Applicants note that the Bassereau reference describes an invention that utilizes packing seals (11) to prevent the vapors from reaching the upper portion of the closure plate (9) when the plate (9) is in the upper position (9a). To the contrary, the present invention provides a configuration that advantageously prevents vaporized substances from adhering to the hermetic door, and shields a seal portion of the door from heat, thereby protecting the seal portion and thus providing an improvement in hermetic sealing capability. (See discussion on page 92, lines 1-7, of the present application by way of illustration.) No such teaching is present in the Bassereau reference.

Furthermore, the Applicants note that in the apparatus of the Bassereau reference, the auxiliary chamber (7) and hood (5) are connected by the connecting means (8) and the auxiliary chamber (7) is shielded by the closure (9). The auxiliary chamber (7) can be transferred to another place with a vacuum state via rollers (15). (Column 4, lines 46-49.) Therefore, the closure (9) is used for maintaining a vacuum state of the auxiliary chamber (7), and not for opening and closing the furnace (1). The Official Action indicates on page 3 that "the hermetic door 9 is subsequently closed (i.e., position 9b), thus maintaining air-tight conditions for both chambers 1 and 7." However, when the chamber (7) is disconnected from the hood (5), chamber (1) is not shielded at all. This means that the closure (9) is not intended for closing and opening the furnace (1). To the contrary, the present invention recites a first hermetic door capable of opening and closing a first opening of a first hermetic chamber.

Additionally, since the closure (9) is intended for sealing the auxiliary chamber (7) when the chamber is disconnected from the hood (5) and transferred to another place, there is

no motivation in the Bassereau reference to locate the closure at a position closer to the furnace between the features cited for the second and third openings.

The Applicants respectfully submit that the obviousness rejections are based on the improper application of hindsight considerations. It is well settled that it is impermissible simply to engage in hindsight reconstruction of the claimed invention, using Applicants' structure as a template and selecting elements from the references to fill in the gaps. Recognizing, after the fact, that a modification of the prior art would provide an improvement or advantage, without suggestion thereof by the prior art, rather than dictating a conclusion of obviousness, is an indication of improper application of hindsight considerations. Simplicity and hindsight are not proper criteria for resolving obviousness.

The Applicants submit that the proposed modification of the teachings of the Bassereau reference does in fact include knowledge gleaned only from the Applicants' disclosure, since that reference does not teach or even suggest the need for or provision of a first hermetic door that is positioned between the second opening and the third opening such that the first hermetic door is shielded from the first hermetic chamber by the tube when insertion of the tube into the first opening is completed, as recited in Claim 1 of the present application.

The present invention advantageously provides a configuration in which vaporized metal or harmful substances evacuated from the third opening are not deposited on the surfaces of the hermetic door, and protects the hermetic door from radiated heat. This structure reduces deposition of the vaporized metal and pollution of harmful substance thereby maintenance of the apparatus can be easier.

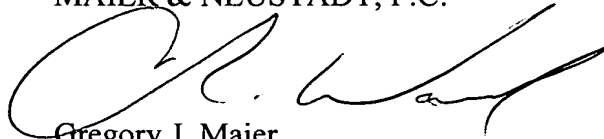
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Thus, the Official Action fails to establish a *prima facie* case of obviousness as set forth in MPEP 2143, since there was not suggestion or motivation, either in the cited references themselves or in the knowledge generally available to one of ordinary skill in the art at the time of the invention, to modify the reference or to combine reference teachings to arrive at the invention recited in Claim 1 of the present application. Accordingly, for at least this reason, the Applicants respectfully request the reversal of the obviousness rejections of independent Claim 1 and Claims 2-20, which directly or indirectly depend therefrom.

Consequently, in view of the above discussion, it is respectfully submitted that the present application is in condition for formal allowance and an early and favorable reconsideration of this application is therefore requested.

Respectfully Submitted,

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